



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/521,632

02/09/2006

Ted A Laurence

58086-223778

2636

26694

7590

11/07/2008

VENABLE LLP

P.O. BOX 34385

WASHINGTON, DC 20043-9998

EXAMINER

NUR, ABDULLAHI

ART UNIT

PAPER NUMBER

2877

MAIL DATE

DELIVERY MODE

11/07/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/521,632	<b>Applicant(s)</b> LAURENCE ET AL.	
	<b>Examiner</b> ABDULLAHI NUR	<b>Art Unit</b> 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Applicant's arguments filed 8/14/2008 have been fully considered but they are not persuasive.

In response to applicant's argument that the reference of record does not teach "identifying the intervals between the arrival time of a given photon and the arrival time of other photons in said plurality of photons to thereby provide photon pair intervals that are a measure of the time between the arrival of each pair of photons in said plurality of photons; determining the number of photons that have arrival times that are within said photon pair intervals to provide a measure of intervening photons located within said photon pair intervals; and using said photon pair intervals and said measure of intervening photons to analyze properties of said species that are located in said detection volume", Examiner respectfully disagrees. Meyer-Almes, the reference of record, discloses optically sensing output signals performed by measuring in repetitive mode a length of time intervals between preferably consecutive photon counts (paragraph 0026, lines 2-4). It is to be noted that knowledge of time intervals between any two photons from the detection volume would allow determining the arrival time of an intervening photon located within said photon pair intervals if the time intervals of the pair photons were taken in a recognized pattern as is the case here i.e., time intervals were taken between consecutive photon counts. The reference further discloses using said photon pair intervals and said measure of intervening photons to analyze properties of said species that are located in said detection volume, namely, molecular brightness as well as the concentration of the said species (paragraph 0098, lines 3-7).

Therefore, this rejection has been maintained.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-18 are rejected under 35 U.S.C. § 102(e) as being anticipated by Meyer-Almes (US 2003/0096433 A1).

As to claims 1, 5, 9 and 13, Meyer-Almes teaches a method for analyzing properties of one or more species that are labeled with fluorophores (paragraph 0016, line 6), said method comprising the steps of: using a detector (paragraph 0024, line 36) to detect a plurality of photons that are emitted in a photon stream from a species that is labeled with a fluorophore and located in a detection volume (paragraph 0025, line 18) wherein each of said photons arrives at said detector at an arrival time; determining the arrival time of each of said photons in said plurality of photons; identifying the intervals between the arrival time of a given photon and the arrival time of other photons in said plurality of photons to thereby provide photon pair intervals that are a measure of the time between the arrival of each pair of photons in said plurality of photons; determining the number of photons that have arrival times that are within said photon pair intervals to provide a measure of intervening photons located within said photon pair intervals;

Art Unit: 2877

and using said photon pair intervals and said measure of intervening photons to analyze properties of said species that are located in said detection volume (paragraph 0016, lines 1-26; paragraph 0026, lines 1-10). It is to be noted that knowledge of time intervals between any two photons from the detection volume would allow determining the arrival time of an intervening photon located within said photon pair intervals if the time intervals of the pair photons were taken in a recognized pattern as is the case here i.e., time intervals were taken between consecutive photon counts.

As to claims 2, 6, 10, 14, Meyer-Almes teaches all as applied to claims 1 and 9, and in addition teaches a method for analyzing properties of one or more species that are labeled with fluorophores, wherein said species that are located in said detection volume comprise a first species labeled with a first fluorophore and a second species labeled with a second fluorophore wherein said first and second species are capable of binding to each other in said detection volume to provide a third species that is labeled with both said first and second fluorophores (paragraph 0016, lines 1-8). It is to be noted that the carrier particle has more than one binding site where on or more fluorophore is capable of being bound to it.

As to claims 3, 4, 7, 8, 11, 12, 15 and 16, Meyer-Almes teaches all as applied to claims 1 and 9, and in addition teaches a method for analyzing properties of one of more species that are labeled with fluorophores, wherein said properties of said species that are analyzed include brightness, concentration (paragraph 0098, lines 1-7).

As to claims 17 and 18, Meyer-Almes teaches all as applied to claims 1 and 9, and in addition teaches a method for analyzing properties of one or more species that

Art Unit: 2877

are labeled with fluorophores wherein said step of analyzing said properties comprises forming a histogram having one axis that is a measure of said photon pair intervals and a second axis that is a measure of said intervening photons located within said photon pair intervals (paragraph 0098, lines 1-7; paragraph 0102, lines 1-8).

### ***Conclusion***

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kara E Geisel whose telephone number is **571 270 1298**. The examiner can normally be reached on Monday through Friday, 8am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on **571 272 2800 ext. 77**. The fax phone number for the organization where this application or proceeding is assigned is **571 273 8300**.

Art Unit: 2877

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Abdullahi Nur  
Patent Examiner,  
Art Unit 2877

**/Kara E Geisel/  
Primary Examiner,  
Art Unit 2877**